

MANONMANIAM SUNDARANER UNIVERSITY

B.C.A

(CHOICE BASED CREDIT SYSTEM)

(WITH EFFECT FROM THE ACADEMIC YEAR 2017 -2018)

Se m	PartI /II/II I/IV/ V/VI	Sub · No.	Subject Status	Subject Title	Conta ct Hrs/ week	L Hrs/ Wee k	T Hrs/ Wee k	P Hrs/ Wee k	Cr edi ts
III	III	15	Core	Java Programming	5	5	0	0	4
	III	16	Core	Financial accounting	4	4	0	0	4
		17	Core	Introduction to Internet with HTML	4	4	0	0	4
	III	18	Major Practical III	Java Programming Lab	4	0	0	4	2
	III	19	Allied - III	Data Structure	3	3	0	0	3
	III	20	Allied Practical III	Data Structure LAB	4	0	0	4	2
	III	21	Skill based Core Theory I	Programming with PHP and MySQL	4	4	0	0	4
	IV	22	Non major elective	Introduction to IT/Introduction to Computers	2	2	0	0	2
	IV	23	Common	Yoga(Excluding contact Hours& Credit)	2	2	0	0	2
Sub Total					30				25

L-Lecture

T-Tutorial

P- Practicals

Distribution of marks between External and Internal Assessment is

For Theory 75 : 25

For Practical 50 : 50

JAVA PROGRAMMING

L T P C
5 0 0 4

COURSE OBJECTIVES:

- To learn Object Oriented Programming language.
- To handle abnormal termination of a program using exception handling.
- To design user Interface using AWT.

UNIT I JAVA DATA TYPES AND OPERATORS

Genesis of Java: Creation of Java – why java is important to internet – The java Buzz words – An overview of Java Object Oriented Programming. Data types: Simple types – Integers – Floating point types – characters – Booleans – A closer Look at Literals – Variables – Type conversion and casting – Automatic type promotion in Expressions – Strings. Arrays: One Dimensional Array – Multi Dimensional Array. Operator: Arithmetic Operators – Bitwise operators – Relational operators – Boolean Logical operators – Assignment operators – Conditional operators–Operator Precedence. **(12 L)**

UNIT II INTRODUCING CLASSES, METHODS AND INHERITANCE

Class Fundamentals – Declaring objects – Assigning object Reference variables – Introducing Methods – Constructors – Garbage collection – Finalize () Method – Stack class. A Closer Look at Methods and classes: Overloading Methods – Using object as parameters – Argument passing – Returning objects – Recursion – Introducing Access control – understanding static – Introducing final – Nested and Inner classes – String class – Using command line arguments. Inheritance Basics – Using super – creating Multilevel Hierarchy – Method overriding – Dynamic Method Dispatch – Using Abstract class – Using final with inheritance – The object class.

(12 L)

UNIT III PACKAGES,INTERFACES, EXCEPTION HANDLING AND MULTITHREADING

Packages – Access Protection – Importing packages – Interfaces. Exception Handling Introduction – Exception Types – Uncaught Exceptions – Using try and catch – Multiple catch clauses – Nested try statements – throw- throws- finally – Java’s Built – in Exception – creating your own Exception subclasses. Multithreaded Programming: Java Thread Model – Main Thread – Creating a Thread - Creating Multiple Threads–Using is Alive () and join () – Thread priorities – Synchronization – Inter thread Communication – Suspending Resuming: and stopping Threads – Using Multithreading. **(12 L)**

UNIT IV APPLETS AND EVENT HANDLING

I/O, Applets and other topics: I/O Basics Reading console Input – writing console output – The Print Writer class – Reading and Writing Files. The Applet class: Applet Basics – Applet Architecture – Applet Skeleton – Applet Display method – Requesting Repainting – HTML APPLET tag- Passing Parameters to Applet – Audio Clip Interface. Event Handling Mechanisms – Delegation Event Model – Event classes (The Action Event Item Event, Key Event, Mouse Event)
– Sources of Events – Event Listener Interfaces (Action Listener, Item Listener, Key Listener, Mouse Listener) – Adapter Classes.

(12 L)

UNIT V INTRODUCING AWT AND AWT CONTROLS

AWT Classes – Window fundamentals – working with Frame Windows - working with Graphic Using AWT controls: Controls fundamentals – Labels – using Buttons – Applying check Boxes – Check Box group – Choice controls – Using a Text field – Using a Text Area – Understanding Layout Managers (Flow Layout only) – Menu Bars and Menus.

(12 L)

COURSE OUTCOMES:

1. To get knowledge of the structure and model of the Java programming language.
2. Able to use the Java programming language for various programming technologies.
3. To get Knowledge for developing software in the Java programming language.

TEXT BOOK:

The Complete Reference JAVA 2.5/ E HERBERT SCHILDT.

REFERENCE BOOKS:

1. Programming with Java – C. Muthu.
2. Programming with Java 2 – C. XAVIER.
3. Introduction to OOP through Java – ISRD Group Tata McGraw hill.
4. Programming with Java a primer 3/E E. BALAGURUSWAMY.

CORE SUBJECT - II

FINANCIAL ACCOUNTING

L T P
C4 0 0
4

COURSE

OBJECTIVES:

- To impart basic accounting knowledge.
- To provide knowledge on the fundamental of financial accounting.
- To expose the student to various financial transaction and its current applications.

UNIT I BASIC CONCEPTS OF ACCOUNTING

Introduction to Accounting : Need for Accounting –Accounting as the language of business – Attributes and steps of Accounting –Book keeping Vs Accounting – Branches of Accounting – Methods of Accounting – Types of Accounting – Accounting Rules - Bases of Accounting – Accounting terminology. Basic Accounting Concepts: Meaning and classification of Accounting- Accounting Concepts – Accounting Conversion – Accounting equations.

(10 L)

UNIT II JOURNAL AND LEDGER

Recording a Financial Data: Memorandum Book, business transaction, Journal, Rules for Debit and Credit, Compound Journal entry, Advantages of Journal, Ledger, Ledger Account, Ledger Posting, Process of Posting, Balancing of An Account, Significance of Balances, Relation between Journal and Ledger-Subsidiary Books.

(15 L)

UNIT III PREPARING TRIAL BALANCE

Trial Balance: Objects, Methods of Preparing Trial balance, how to locate errors, hints for the preparation of trial balance & problems. **(11**

L)

UNIT IV FINAL ACCOUNTS

Trading account – individual items posted to the debit of trading account – individual items credited to trading account – advantages of trading account – profit & loss account - advantages of profit & loss account- manufacturing account- balance sheet- classification of assets & liabilities. **(12 L)**

UNIT V ACCOUNTS FOR NON PROFIT ORGANISATION

Introduction – Final accounts of no trading concern- receipts and payments account – features- income & expenditure account – feature- distinction between the two – treatment of special items – some important adjustments – types of problems – Distinction between income and expenditure account and profit and loss account – accounts of professional men.

(12 L)

COURSE OUTCOMES:

- To acquire knowledge about general aspects of business operations.
- To explain the concepts and procedures of financial reporting, including income and expenditure statement, balance sheet etc.
- To locate and analyze financial data from annual reports of corporations.

TEXT BOOKS:

1. Financial Accounting by T.S.Reddy, A.Murthy – Margham Publications, Chennai.
2. Fundamentals of Advanced Accounting by R.S.N.Pillai, Bagavathi, S,Uma.

REFERENCE BOOKS:

1. Essentials of Financial Accounting – by Asish K.Bhattacharayya, PHI Private Limited.
2. Advanced Accountancy by S.P.Jain and Narang – Kalyani Publications, New Delhi.

CORE SUBJECT – III

INTRODUCTION TO INTERNET WITH HTML

L T P
C 4 0
0 4

COURSE

OBJECTIVES:

- To learn the principle of Web page design.
- To visualize the basic concept of HTML.
- To recognize the elements of HTML.

UNIT I INTRODUCTION TO INTERNET

Computer in business-networking-internet- e-mail-gopher-world wide web, Internet Technologies – Internet Browsers.

(12L)

UNIT II INTRODUCTION TO HTML

History of HTML - HTML generation and Documents – Tags and Links – Head and Body Section.

(12 L)

UNIT III DESIGNING TABLES

Designing Body Section – Ordered and Unordered List – Table Handling.

(12 L)

UNIT IV INTRODUCTION TO DHTML

Features of DHTML – Defining styles – Working with Colors – Text and Fonts with Style. (12 L)

UNIT V FRAMES

Frame set Definition – Nested frames – A web design project – forms.

(12L)

COURSE OUTCOMES:

- To create a web page.
- To validate a web page.
- To publish a web page.

TEXT BOOK:

1. World Wide Design with HTML by C.XAVIER – TMH Publications.

REFERENCE BOOK:

1. Fundamental of the internet and the World Wide Web by Greenlaw and Hepp. TMH Publications.

MAJOR PRACTICAL –
III JAVA
PROGRAMMING LAB
PRACTICAL LIST

L T P
C O O
4 2

1. Write a java program to find the area of Square, Rectangle, and Triangle by (a) Overloading Constructor Method (b) Overloading Method
2. Define a class called student with data members name, Roll Number and age.
3. Write a suitable constructor and method output () to display the details. Derive another class student 1 from the student with the data member's height and weight.
4. Write a suitable constructor and method output () to display the details which overwrites the super class method output ().(Apply Method Over riding concepts)
5. Write a java program to create a package "Employee" which contains the classes Emp and Emppay. The data members of Emp are name, emp_id, category, and Bpay. Write suitable constructor and methods to compute the net pay of the employee. The class Emppay contains the main method.
6. Write a java program to create and Implement an Interface.
7. Write a java program to create a thread Using Thread Class
8. Write a java program to Design a calculator to perform arithmetic operations.
9. Create an applet with four Checkboxes with labels and a Text area object. The program must display the details while clicking a particular checkbox.
10. Write a java program to demonstrate the use of choice box.
11. Write a java program, which creates a window with a checkbox group with boxes for the colors, violet, indigo, yellow, orange, red, blue and green. When the button is selected the background color must change accordingly.
12. Write a java program to throw the following Exception:
(a) Negative Array Size (b) Array Index out of Bounds

13. Write a java program to create a file menu with option New, Save and Close, Edit menu with option cut, copy, and paste.

14. Write a java programming to illustrate Mouse Event Handling.

**ALLIED
SUBJECT – III
DATA
STRUCTURE**

L T P C

3 0 0 3

COURSE OBJECTIVES:

- To understand different methods of organizing large amounts of data.
- To efficiently implement different data structure.
- To efficiently implement solution for different problems.

UNIT I DATATYPES INTRODUCTION

Introduction: Pseudo code – The Abstract Data Type – A Model for an Abstract Data Type – Algorithms Efficiency. Searching: List Searches – Hashed List Searches – Collision Resolution.
(10 L)

UNIT II LINKED LISTS

Linear List Concepts – Linked List Concepts – linked List Algorithms – Processing a Linked List –Complex Linked List Structures. **(10 L)**

UNIT III STACKS AND QUEUES

Basic Stacks Operations – Stack Linked List Implementation – Stack Applications – Queue operations – Queue Linked List Design.

(10L)

UNIT IV TREES

Basic Tree Concepts – Binary Tree - Binary Tree Traversals – Expression Trees- General Trees –Binary Search Trees – Heap definition – Heap Structure – Basic Heap Algorithm.

(8L)

UNIT V INTRODUCTION TO GRAPHS

Sorting And Graphs: General Sort Concepts – Quick sort – External sorts. Graphs: Terminology – Operations – Graph storage Structure – Networks.
(7L)

COURSE OUTCOMES:

- An understanding of the basic data structures.
- An understanding of the basic search and sort algorithms.
- The appropriate use of a particular data structure and algorithm to solve a problem.

TEXT BOOK:

1.Data Structures a Pseudo code Approach with C++, Richard F. Gilberg& Behrouz A forouzan, ThomsanBrooks / Cple. Chapters: 1,2.1,2.3,2.4,3.1-3.4,3.6,4.1-4.3,5.1,5.2,7.1-7.5,8.1,9.1-

9.5,11.1,11.4 (Quick Sort only) 11.6, 12.1-12.5.

REFERENCE BOOKS:

1.Fundamentals of Data Structures Eilis Horowitz & Sartaj Gal Gotia Publications.2.Data Structures & Algorithm in Java third edition – Adam Drozdek.

ALLIED
PRACTICAL - III
DATA
STRUCTURE LAB

PRACTICAL LIST

1. Write a C++ program to implement sequential search and Binary search in array. **L T P**
CO 0 4
2

2. Write a C++ program to implement linked list and perform the following operations
(a) Add a node as first node. (b) Add a node as last node.

3. Write a C++ program to implement linked list and implement the following Objects.
(a) Delete the first node. (b) Delete the last node.

4. Write a C++ program to implement a stack linear list perform the push and pop Operations.

5. Write a C++ program to implement binary tree using Linked and perform the following traversal:
(a) In order traversal. (b) Pre order traversal. (c) Post order traversal.

6. Write a C++ program to implement merge sort.

7. Write a C++ program to implement quick sort.

SKILL BASED CORE THEORY I

PROGRAMMING WITH PHP & MYSQL

L T P
C400
4

OBJECTIVES:

- To understand the concepts of open sources.
- To learn and use open source database management system MySQL
- To create dynamic web pages and websites.
- To connect webpages with database.

UNIT-I

Introduction: Introduction- Open source PHP – PHP history- features-variables- statements operators conditional statements-if-switch-nesting conditions-merging forms with conditional statements-loops-while-do-for – loop iteration with break and continue.
(12L)

UNIT - II

Arrays and Functions: Arrays: Creating an array- modifying array-processing array-grouping form with arrays- using array functions- creating user defined functions- using files-sessionscookies- executing external programs- Creating sample applications using PHP.
(12L)

UNIT -III

File Handling Opening files using fopen - looping over a files content with feof- reading text from a file using fgets - closing a file- reading character with fgetc- reading whole file with file_get_contentsreading a fle into into an array with file-checking if a file exists-fscanparse_ini_file- Getting file information with stat-fseek- copying files with copy- deleting fileswriting to a file-reading and writing binary files –locking files.
(12L)

UNIT-IV MySQL:

Effectiveness of MySQL -MySQL Tools-Prerequisites for MySQL connectionDatabases and

tables- MySQL data types-Creating and manipulating tables-Insertion-updation and deletion of rows in tables -Retrieving data- Sorting and filtering retrieved data -Advanced data filteringData manipulation functions-Aggregate functions -Grouping data- Sub queriesJoining Tables- Set operators-Full text searching.
(12L)

UNIT-V PHP with MySQL:

Working MySQL with PHP-database connectivity- usage of MYSQLcommands in PHPprocessing result sets of queries- handling errors-debugging and diagnostic functionsvalidating user input through Database layer and Application layerformatting query output with Character- Numeric-Date and time –sample database applications.(12L)

TEXT BOOKS:

1. VIKRAM VASWANI- “PHP and MySQL” - Tata McGraw-Hill- 2005
2. BEN FORTA - ”MySQL Crash course “ SAMS- 2006.
- 3 . Steven Holzner , The Complete reference PHP, Tata McGraw Hill,2008

REFERENCE BOOKS:

- Tim Converse- Joyce Park and Clark Morgan- ”PHP 5 and MySQL” -Wiley India reprint - 2008.
- Robert Sheldon- Geoff Moes- ”Beginning MySQL”-Wrox- 2005

NON MAJOR ELECTIVE PAPERS
SYLLABUS INTRODUCTION TO
INFORMATION TECHNOLOGY /
INTRODUCTION TO COMPUTERS

L T P
C2 0 0
2

INTRODUCTION TO INFORMATION TECHNOLOGY

COURSE OBJECTIVES:

- To understand the principles of digital devices, computer hardware, software, telecommunications, networking and multimedia.
- This course provides a sound foundation on the basic theoretical and practical principles behind the technologies.
- To discuss up to date issues surrounding them including social aspects and how they impact everyday life.

UNIT I INFORMATION TECHNOLOGY BASICS

Introduction, Information, Technology, Information Technology, Present Scenario, Role of Information Technology, Information Technology and internet, Careers in IT Industry. Computer Organization and Architecture: Central Processing Unit, inside a computer, Data representation in Computer, Coding Schemes.

(6 L)

UNIT II COMPUTER STORAGE AND MEMORY

Introduction, Memory Hierarchy, Random Access Memory (RAM), Read Only Memory (ROM), RAM, ROM and CPU interaction, Types of Secondary storage devices, Magnetic tape, Magnetic disk, types of magnetic disk, optical disk, type of optional disks.

(6 L)

UNIT III INPUT & OUTPUT DEVICES

Input, Output Media: Introduction, types of input devices, types of output devices, Multimedia. Essentials: Introduction, Multimedia definition, Building blocks of Multimedia, Multimedia

system, Multimedia applications, Virtual reality.

(6 L)

UNIT IV ABOUT INTERNET

The Internet: Introduction, Evolution of Internet – Basic Internet terms – Getting Connected to Internet – Internet Applications – Data over Internet. Internet tools: Introduction – Web Browser – Browsing Internet using Internet Explorer – E-Mail – Search engines – Instant messaging.

(6 L)

UNIT V CURRENT TRENDS IN IT

Emerging trends in IT: Introduction, E-Commerce – Electronic Data Interchange – Mobile Communication – Bluetooth – Global Positioning System – Infrared Communication – Smart Card – Imminent Technologies.

(6 L)

COURSE OUTCOMES:

- To understand the architecture of the computer.
- To know about internet & its applications.

TEXT BOOK:

1. Introduction to computer and Information Technology, D.GloryRatha Mary, S.Selvanayahi, Shekina Publications.

REFERENCE BOOKS:

1. Introduction to Information Technology ITL Education Solution Limited, Pearson Education.
2. Fundamental of Information Technology By Alexis Leon & Mathews Leon Vikas Publication – New Delhi.

**INTRODUCTION TO
COMPUTERS**

L T P C

2 0 0 2

COURSE OBJECTIVES:

- To learn about basic components of the computer.
- To study functions and types of operating system.
- To study about software Installation.

UNIT I COMPUTER BASICS

Introduction, Characteristics of Computers – Evolution of Computers, Generation of Computers, Classification of Computers, the Computer System, Application of Computers.

(6 L)

UNIT II COMPUTER ORGANIZATION AND ARCHITECTURE

Central Processing Unit, Inside a computer, Data representation in Computer, Coding Schemes.

(6 L)

UNIT III INPUT & OUTPUT UNITS

Computer input units, Computer output units.

(6 L)

UNIT IV MEMORY & STORAGE DEVICES

Computer Memory and Storage: Introduction, Memory Hierarchy, Random Access Memory (RAM), Read Only Memory (ROM), RAM, ROM and CPU interaction, Types of Secondary storage devices, Magnetic tape, Magnetic disk, types of magnetic disk, optical disk, type of optional disks. **(6 L)**

UNIT V OPERATING SYSTEM

Introduction, Operating System, Definition, Evolution of Operating System, Types of Operating System, Functions of Operating System. Computer Software: Introduction, Computer Software, Definition, Categories of Software, Installing and Uninstalling software, Software piracy, Software terminologies.

(6 L)

COURSE OUTCOMES:

- To understand the meaning and basic components of a computer system, define and distinguish Hardware and Software components of computer system.

TEXT BOOK:

1. Introduction to computer and Information Technology, D.GloryRatha Mary, S.Selvanayahi, Shekina Publications.

REFERENCE BOOKS:

1. Introduction to computer, Peter Norton Tata McGraw Hill.

2. Fundamental of Information Technology By Alexis Leao & Mathews Leon Vikas
Publication –New Delhi.